



BUILDING CODE COMPLIANCE OFFICE (BCCO)  
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA  
METRO-DADE FLAGLER BUILDING  
140 WEST FLAGLER STREET, SUITE 1603  
MIAMI, FLORIDA 33130-1563  
(305) 375-2901 FAX (305) 375-2908  
[www.buildingcodeonline.com](http://www.buildingcodeonline.com)

## NOTICE OF ACCEPTANCE (NOA)

Illinois Tool Works, Inc. / Buildex Division  
1349 West Bryn Mawr Avenue.  
Itasca, IL 60143

### SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code. This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone.

### DESCRIPTION: Tapcon Concrete Anchors with Advanced Threadform Technology

**APPROVAL DOCUMENT:** Drawing No.06-ITW-0001, Sheets 1 of 1, titled "Tapcon Concrete Anchors with Advance Threadform Technology" issued 06/21/06 with last revision on 04/02/07, prepared by Engineering Express signed and sealed by Frank L. Bennardo, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance (NOA) number and approval date by the Miami-Dade County Product Control Division.

### MISSILE IMPACT RATING: None

**LABELING:** Each Box shall bear a permanent label with the manufacturer's name or logo, city, state and the following statement: "Miami-Dade County Product Control Approved or MDCPCA", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA # 05-1020.01 and consists of this page 1, evidence page E-1, as well as approval document mentioned above.

The submitted documentation was reviewed by **Carlos M. Utrera, P.E.**



NOA No 07-0315.03  
Expiration Date: August 31, 2011  
Approval Date: June 14, 2007  
Page 1

**Illinois Tool works, Inc. / Buildex Division.**

**NOTICE OF ACCEPTANCE: EVIDENCE PAGE**

**A DRAWINGS:**

1. Drawings prepared by Engineering Express, titled "Tapcon Concrete Anchors with Advanced Threadform Technology", Drawing No. 06-ITW-0001, issued on 06/21/06 with last revision on 04/02/07, sheet 1 of 1, signed and sealed by Frank L. Bennardo PE.

**B TEST: (submitted under NOA # 05-1020.01)**

1. Test report on Tension and Shear Resistance, Report No. 4I131 were for "Werco Tapcon Concrete/Masonry Screw Anchors" per ASTM E 488 prepared by Cel Consulting on 04/29/05, signed and sealed by L. W. Mattis, PE
2. Test report on Tension and Shear Resistance, Report No. 4I131 were Supplement 6519 for Tapcon with Advanced Threadform Technology per ASTM E 488 prepared by Cel Consulting on 05/19/05, signed and sealed by L. W. Mattis PE.
3. Test report of corrosion resistance for fasteners, project No. ITW-003-02-01, 02, 03 & 04 for fasteners with Tapcon Plus, Silver Climaseal, Silver Ultrashield and White Ultrashield per ASTM G85 as noted on TAS 114(E) prepared by Cel Consulting on 10/22/04 and 05/16/06 signed and sealed by C. L. Thomas PE.

**C CALCULATIONS: (submitted under NOA # 05-1020.01)**

1. Calculations of allowable loads for Tapcon with Advanced Threadform Technology, Project # 06-ITW-0001, prepared by Engineering Express on 06/22/06 signed and sealed By Frank L. Bennardo, P.E.

**D. QUALITY ASSURANCE:**

1. Building Code Compliance Office.

**E STATEMENTS: (submitted under NOA # 05-1020.01)**

1. Code compliance letter issued by Engineering Express on 06/23/06, signed by F. L. Bennardo, PE.
2. No financial interest letter issued by Engineering Express on 06/23/06 and signed F. L. Bennardo PE and notarized by D. N. Stuart on 06/23/06.

**E. OTHERS:**

1. Tension and Shear Resistance Test per ASTM E 488, prepared by C.E.L Consulting, Report No. 71B153, signed and sealed by Lee W. Mattis, P.E.
2. Corrosion Resistance Test per ASTM G 85 as noted in TAS 114(E), prepared by PRI Construction Materials Technologies, Report No. PRI06241, signed and sealed by Charles L. Thomas, P.E.
3. Calculations Addendum on new Stainless Steel Anchors, prepared by Engineering Express, signed and sealed by Frank L. Bennardo, P.E.



**Carlos M. Utrera, P.E.  
Product Control Examiner  
NOA No 07-0315.03**

**Expiration Date: August 31, 2011  
Approval Date: June 14, 2007**

# TW Buildex TAPCON® with ADVANCED THREADFORM TECHNOLOGY™ CONCRETE & MASONRY ANCHOR

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No. 07-03/5.03  
Expiration Date 08/31/2011  
By *[Signature]*  
Miami Trade Product Control  
Division

FRANK L. BENNARDO, P.E.  
#PE0046549

05/17/2007

## GENERAL NOTES:

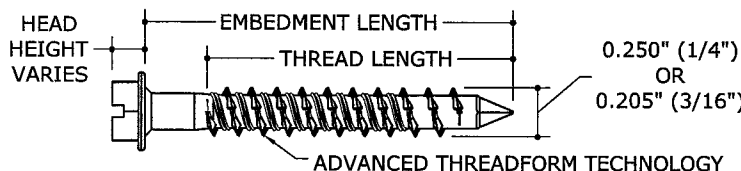
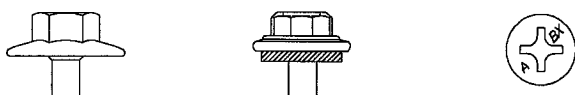
- THIS PRODUCT HAS BEEN DESIGNED & TESTED IN ACCORDANCE WITH THE 2004 FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE) AND THE FOLLOWING STANDARDS: ASTM E488, ASTM G85, & TAS 114.
- ANCHORS REPRESENTED IN TABLES 1-4 ARE MANUFACTURED FROM HEAT-TREATED STEEL WITH AN ALTERNATING HIGH-LOW ADVANCED THREADFORM TECHNOLOGY AND SHALL HAVE CORROSION-RESISTANT COATINGS AS DESCRIBED BELOW:
  - SILVER & WHITE ULTRASHIELD
  - BLUE & SILVER CLIMASEAL
- ANCHORS REPRESENTED IN TABLE 5 ARE OF 410 STAINLESS STEEL ALLOY WITH AN ALTERNATING HIGH-LOW ADVANCED THREADFORM TECHNOLOGY AND SHALL HAVE A CLIMASHIELD CORROSION-RESISTANT COATING.
- ANCHOR INSTALLATION SHALL BE MADE IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS AND THIS NOTICE OF ACCEPTANCE.
- CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS, WITH STRENGTH PROPERTIES AS SPECIFIED HEREIN. HOLLOW AND GROUT-FILLED CONCRETE BLOCK SHALL CONFORM TO ASTM C-90.
- PILOT HOLES FOR ALL INSTALLATIONS SHALL HAVE DEPTH 1/4" LONGER THAN INDICATED EMBEDMENT DEPTH AND DIAMETER AS FOLLOWS:
  - 3/16" ANCHORS: 0.173"Ø
  - 1/4" ANCHORS: 0.204"Ø
- REFERENCE CEL CONSULTING TEST REPORT #4I131werc (4/29/2005), TEST REPORT #4I131werc SUPPLEMENT 6519 (5/19/2006) & TEST REPORT #71B153 (01/31/2007), AS WELL AS PRI ASPHALT TECHNOLOGIES, INC. TEST REPORTS #ITW-002-02-01 (12/1/2004), #ITW-003-02-02 (6/15/2006), #ITW-003-02-03 (6/15/2006), & #ITW-003-02-04 (6/15/2006), AND PRI CONSTRUCTION MATERIALS TECHNOLOGIES, INC. TEST REPORT #ITW-004-02-01 (11/14/2006).

## HEAD STYLE OPTIONS

SLOTTED HEX WASHER HEAD    PHILLIPS FLAT HEAD    PHILLIPS PAN HEAD    HEX HEAD MARKINGS



MAXI-SET HEX WASHER HEAD    SCOTS STAINLESS STEEL HEAD WITH WASHER    PHILLIPS HEAD MARKINGS



## TAPCON WITH ADVANCED THREADFORM TECHNOLOGY

1:1 SCALE

SIDE VIEW

STEEL ANCHORS TO NORMAL WEIGHT CONCRETE

### 1a TENSION CAPACITIES

BASED ON EMBEDMENT & EDGE DISTANCE  
FOR SINGLE ANCHORS

| ANCHOR DIAM | EMBED  | EDGE DIST | 2,000 PSI CONC | 4,000 PSI CONC | 5,000 PSI CONC |
|-------------|--------|-----------|----------------|----------------|----------------|
|             |        |           |                |                |                |
| 3/16"       | 1"     | 1"        | 125 lb         | 141 lb         | 141 lb         |
|             |        | 1 7/8"    | 164 lb         | 168 lb         | 210 lb         |
|             | 1 1/2" | 1"        | 243 lb         | 279 lb         | 318 lb         |
|             |        | 1 7/8"    | 278 lb         | 279 lb         | 327 lb         |
|             | 1 3/4" | 1"        | 358 lb         | 360 lb         | 390 lb         |
|             |        | 1 7/8"    | 390 lb         | 401 lb         | 433 lb         |
| 1/4"        | 1"     | 1 1/4"    | 174 lb         | 194 lb         | 237 lb         |
|             |        | 2 1/2"    | 188 lb         | 199 lb         | 237 lb         |
|             | 1 1/2" | 1 1/4"    | 313 lb         | 449 lb         | 519 lb         |
|             |        | 2 1/2"    | 346 lb         | 454 lb         | 545 lb         |
|             | 1 3/4" | 1 1/4"    | 465 lb         | 543 lb         | 543 lb         |
|             |        | 2 1/2"    | 508 lb         | 594 lb         | 707 lb         |

### 1b SHEAR CAPACITIES

BASED ON EMBEDMENT & EDGE DISTANCE  
FOR SINGLE ANCHORS

| ANCHOR DIAM | EMBED  | EDGE DIST | 2,000 PSI CONC | 4,000 PSI CONC | 5,000 PSI CONC |
|-------------|--------|-----------|----------------|----------------|----------------|
|             |        |           |                |                |                |
| 3/16"       | 1"     | 1 1/8"    | 126 lb         | 150 lb         | 150 lb         |
|             |        | 2 1/4"    | 181 lb         | 181 lb         | 244 lb         |
|             | 1 1/2" | 1 1/8"    | 186 lb         | 186 lb         | 186 lb         |
|             |        | 2 1/4"    | 215 lb         | 226 lb         | 226 lb         |
|             | 1 3/4" | 1 1/8"    | 204 lb         | 204 lb         | 204 lb         |
|             |        | 2 1/4"    | 218 lb         | 251 lb         | 260 lb         |
| 1/4"        | 1"     | 1 1/2"    | 196 lb         | 310 lb         | 310 lb         |
|             |        | 3"        | 237 lb         | 340 lb         | 359 lb         |
|             | 1 1/2" | 1 1/2"    | 232 lb         | 380 lb         | 416 lb         |
|             |        | 3"        | 368 lb         | 417 lb         | 417 lb         |
|             | 1 3/4" | 1 1/2"    | 303 lb         | 346 lb         | 500 lb         |
|             |        | 3"        | 421 lb         | 492 lb         | 500 lb         |

### 2 TENSION & SHEAR CAPACITIES

BASED ON EMBEDMENT & SPACING  
FOR PAIRS OF ANCHORS\*

| ANCHOR DIAM | EMBED  | SPACING | 2,000 PSI CONCRETE |                  |         |                  |
|-------------|--------|---------|--------------------|------------------|---------|------------------|
|             |        |         | TENSION            | REDUCTION FACTOR | SHEAR   | REDUCTION FACTOR |
| 3/16"       | 1"     | 1 1/2"  | 220 lb             | 0.81             | 352 lb  | 1.00             |
|             |        | 3"      | 271 lb             | 1.00             | 352 lb  | 1.00             |
|             | 1 1/2" | 1 1/2"  | 443 lb             | 0.83             | 358 lb  | 0.91             |
|             |        | 3"      | 536 lb             | 1.00             | 392 lb  | 1.00             |
|             | 1 3/4" | 1 1/2"  | 641 lb             | 0.98             | 445 lb  | 0.94             |
|             |        | 3"      | 653 lb             | 1.00             | 474 lb  | 1.00             |
| 1/4"        | 1"     | 2"      | 261 lb             | 0.76             | 447 lb  | 0.89             |
|             |        | 4"      | 343 lb             | 1.00             | 500 lb  | 1.00             |
|             | 1 1/2" | 2"      | 533 lb             | 0.72             | 628 lb  | 0.89             |
|             |        | 4"      | 740 lb             | 1.00             | 703 lb  | 1.00             |
|             | 1 3/4" | 2"      | 811 lb             | 0.92             | 1117 lb | 0.98             |
|             |        | 4"      | 885 lb             | 1.00             | 1144 lb | 1.00             |

\* REFER TO DETAIL UNDER TABLE 4 FOR DEPICTION OF ANCHOR SPACING & EDGE DISTANCE REQUIREMENTS FOR PAIRS OF ANCHORS

STEEL ANCHORS TO HOLLOW BLOCK

### 3 TENSION & SHEAR CAPACITIES

BASED ON EMBEDMENT & EDGE DISTANCE

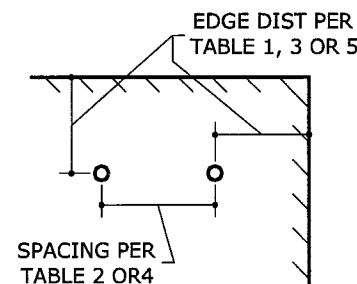
| ANCHOR DIAM | EMBED | EDGE DIST | LIGHT-WEIGHT CMU BLOCK |        | MEDIUM-WEIGHT CMU BLOCK |        |
|-------------|-------|-----------|------------------------|--------|-------------------------|--------|
|             |       |           | TENSION                | SHEAR  | TENSION                 | SHEAR  |
| 3/16"       | 1"    | 2"        | 54 lb                  | 104 lb | 85 lb                   | 169 lb |
|             |       | 4"        | 56 lb                  | 104 lb | 183 lb                  | 183 lb |
| 1/4"        | 1"    | 2"        | 54 lb                  | 135 lb | 147 lb                  | 202 lb |
|             |       | 4"        | 70 lb                  | 156 lb | 253 lb                  | 253 lb |

### 4 TENSION & SHEAR CAPACITIES

BASED ON EMBEDMENT & SPACING FOR  
PAIRS OF ANCHORS\*

| ANCHOR DIAM | EMBED | SPACING | LIGHT-WEIGHT CMU BLOCK |        |
|-------------|-------|---------|------------------------|--------|
|             |       |         | TENSION                | SHEAR  |
| 3/16"       | 1"    | 1 1/2"  | 128 lb                 | 252 lb |
|             |       | 3"      | 128 lb                 | 252 lb |
| 1/4"        | 1"    | 2"      | 105 lb                 | 265 lb |
|             |       | 4"      | 170 lb                 | 280 lb |

\* REFER TO DETAIL AT RIGHT FOR DEPICTION OF ANCHOR SPACING & EDGE DISTANCE REQUIREMENTS FOR PAIRS OF ANCHORS



EDGE DIST & SPACING:  
"PAIRS OF ANCHORS"

STAINLESS STEEL ANCHORS

### 5 TENSION & SHEAR CAPACITIES

BASED ON EMBEDMENT & EDGE DISTANCE

| ANCHOR DIAM | EMBED  | EDGE DIST | 3000 PSI CONCRETE |        | MEDIUM-WEIGHT CMU BLOCK |        |
|-------------|--------|-----------|-------------------|--------|-------------------------|--------|
|             |        |           | TENSION           | SHEAR  | TENSION                 | SHEAR  |
| 3/16"       | 1"     | 1"        | 164 lb            | 150 lb | 67 lb                   | 72 lb  |
|             |        | 2 1/2"    | 164 lb            | 284 lb | 67 lb                   | 124 lb |
|             | 1 3/4" | 1"        | 336 lb            | 169 lb |                         |        |
|             |        | 2 1/2"    | 379 lb            | 364 lb |                         |        |
| 1/4"        | 1"     | 1"        | 187 lb            | 126 lb | 85 lb                   | 64 lb  |
|             |        | 2 1/2"    | 220 lb            | 301 lb | 96 lb                   | 168 lb |
|             | 1 3/4" | 1"        | 344 lb            | 214 lb |                         |        |
|             |        | 2 1/2"    | 473 lb            | 516 lb |                         |        |

\* REFER TO DETAIL UNDER TABLE 4 FOR DEPICTION OF EDGE DISTANCE REQUIREMENTS

## CAPACITY TABLE NOTES:

- ALLOWABLE DESIGN CAPACITIES SHOWN IN TABLES ABOVE HAVE BEEN DETERMINED USING A SAFETY FACTOR OF 4:1
- EDGE DISTANCE AND SPACING DENOTED HEREIN SHALL BE CENTER-TO-EDGE AND CENTER-TO-CENTER DISTANCES, RESPECTIVELY.
- ANCHORS SHALL BE INSTALLED A MINIMUM OF 12 DIAMETERS ON CENTER FOR 100% ANCHOR CAPACITY (AS LISTED IN TABLES). SPACING MAY BE REDUCED TO SPACING SHOWN IN TABLES 2 & 4 PROVIDED THAT ANCHOR CAPACITIES ARE REDUCED TO CORRESPONDING VALUES AS LISTED THEREIN.
- LINEAR INTERPOLATION MAY BE USED FOR EDGE DISTANCE AND SPACING BETWEEN MINIMUM AND MAXIMUM DISTANCES SHOWN IN TABLES.
- THE LESSER OF EDGE DISTANCE AND SPACING IS THE MINIMUM AT WHICH ANCHORS MAY BE INSTALLED.
- "REDUCTION FACTOR" IN TABLE 2 IS THE REDUCTION FACTOR TO BE APPLIED TO ALLOWABLE LOADS FOR REDUCED SPACING. THIS REDUCTION SHALL BE IN ADDITION TO THE REDUCTION IN ALLOWABLE LOAD (IF ANY) DUE TO REDUCED EDGE DISTANCE.
- HOLLOW CONCRETE MASONRY UNITS (CMU) SHALL CONFORM TO ASTM C90 SPECIFICATIONS AND SHALL HAVE DENSITIES AS DEFINED BELOW:
  - "LIGHT WEIGHT" CMU: DENSITY > 95 PCF
  - "MEDIUM WEIGHT" CMU: DENSITY > 117 PCF
- DESIGNATES CONDITIONS WHICH ARE NOT ACCEPTABLE FOR USE.

ENGINEERING  
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A FRANK L. BENNARDO, P.E., INC. INNOVATION

Buildex  
Buildex Division of Illinois Tool Works, Inc.  
1349 West Bryn Mawr Avenue  
Itasca, IL 60143

TAPCON CONCRETE ANCHORS WITH  
ADVANCED THREADFORM TECHNOLOGY  
MIAMI-DADE NOTICE OF ACCEPTANCE

| REMARKS               | DRWN | CHKD | DATE     |
|-----------------------|------|------|----------|
| INIT ISSUE            | CL   | FLB  | 6/21/06  |
| REVISE & UPDATE NOTES | CL   | FLB  | 7/31/06  |
| ADD S.S. ANCHORS      | KL   | CL   | 02/22/07 |
| ADD PHILLIPS PAN HEAD | KL   | CL   | 04/02/07 |

06-ITW-0001

SCALE: 02

PAGE DESCRIPTION:

1